



FACULTY OF ENGINEERING
B.E. 2/4 (CSE) I Sem. (Old) Examination, December 2011
COMPUTER ORGANIZATION AND ARCHITECTURE

Time: 3 Hours]

[Max. Marks: 75

Note : Answer *all* questions from Part A. Answer *any five* questions from Part B.

PART – A

(25 Marks)

1. A digital computer has a common bus system for 16 register of 32 bits each, the bus is constructed with multiplexer.
 - a) How many selection input are there in each multiplexer ?
 - b) What size of multiplexers are needed ?
 - c) How many multiplexers are there in the bus ?3
2. Give the basic difference between micro-operation and micro instruction. 2
3. What is the function of program counter, instruction register, data register ? 3
4. What is effective address ? Calculate effective address for indexed addressing mode. 2
5. What is pipelining ? Explain with an example. 3
6. What are the Flynn's classification ? 2
7. What is meant by cycle stealing concept in DMA ? 2
8. What is the concept behind Memory Inter leaving ? 2
9. Derive the match logic for a single word in associative memory. 3
10. Draw and explain the message format for character oriented protocol. 3

PART – B

(50 Marks)

11. a) Draw and explain the flow chart for instruction cycle. 6
b) Explain the functions of basic registers for basic computer. 4
12. a) What are major types of interrupts ? 4
b) Write the microoperation required to implement sub routine call and return from last subroutine. 6



- 13. a) Draw and explain block diagram of BCD adder. 4
- b) Explain the booth algorithm. 6
- 14. a) Distinguish between isolated I/O configuration and memory mapped I/O configuration. 5
- b) Distinguish between synchronous transmission and asynchronous transmission. 5
- 15. a) Explain the concept behind virtual memory. 6
- b) Explain the content addressable memory. 4
- 16. Write short note :
 - a) Magnetic disk
 - b) Micro program sequences for a control memory
 - c) Stack organization.
- 17. a) Draw and explain the block diagram of DMA. 7
- b) Write about the locality of reference. 3